

### **REMARKS**

Claims 42-48, 50, 51, 55 and 57 are pending and under consideration in the above-identified application. Claims 1 – 41, 52 – 54 and 56 were cancelled previously.

In the Office Action dated August 18, 2009, the Examiner rejected claims 42-48, 50, 51, 55 and 57.

With this Amendment, claim 42 was amended. No new matter has been added as a result of the Amendment.

#### **I. 35 U.S.C. § 112 Indefiniteness Rejection of Claims**

Claims 42-48, 50, 51, 55 and 57 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully traverses this rejection.

In response to the Examiner's rejection, claim 42 was amended for clarification purposes. Specifically, the polymer is treated with an acid or an alkali to convert acrylonitrile into hydrophilic substituents and/or ionic substituents via the hydrolysis mechanism. Accordingly, the Examiner's above rejection is now moot. As such, Applicant respectfully requests that the above rejection be withdrawn.

#### **II. 35 U.S.C. § 102/103 Rejection of Claims**

Claims 42, 44, 48, 50, 51, 55 and 57 were rejected under 35 U.S.C. § 102(b) as being anticipated by Horwitz et al. (U.S. Patent No. 5,281,631), or in the alternative under 35 U.S.C. 103(a) as being obvious over Horwitz et al. Applicant respectfully traverses this rejection.

The claims require a cleansing method that includes the step of providing a cleansing processing agent in a solid state which is non-water soluble. The cleansing processing agent includes a polymer having 20 to 50 mol % of acrylonitrile and 50 to 80 mol % of at least one of

styrene and conjugated diene as constituent unit. The polymer is treated with an acid and/or an alkali to convert via hydrolysis the acrylonitrile into hydrophilic substituents and/or ionic substituents. As discussed in the specification, the amount of acrylonitrile, styrene and conjugated diene have an effect on the amount of acrylonitrile that is converted to hydrophilic and/or ionic substituents. Specification, page 5. Specifically, if the content of acrylonitrile is too small, the rate of adsorption of harmful substances is lowered.

Horwitz et al. teaches a method for polymerizing an ion exchange resin called Diphonix which includes diphosphonic functional groups. Horwitz et al., Col. 2, lines 42-66. Specifically, Diphonix resin is a bifunctional resin that contains two ligands, one of which allows access to the resin and the second, which retains a targeted ion in the resin. Symposium, *American Chemical Society, Fundamentals and Applications of Anion Separators*, 174 (2004). The Examiner does not provide any evidence that the polymer taught by Horwitz et al. is the same compound required by the claims. Namely, the claims require specific amounts of compounds to create the cleansing processing agent, which affects the type of copolymer that is made. Additionally, the claims do not require diphosphonic functional groups, a feature of the Diphonix resin.

As such, because Horwitz et al. fails to teach or even fairly suggest all the required elements of the claims, claims 42, 44, 48, 50, 51, 55 and 57 are patentable over the above cited reference. Accordingly, Applicant respectfully requests that the above rejection be withdrawn. Additionally, the rejection of dependent claim 43, which is based in part on Horwitz et al. should be withdrawn for at least the same reasons.

**III. 35 U.S.C. § 103 Obviousness Rejection of Claims**

Claims 45-47 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Horwitz et al. in view of Grant et al. (U.S. Patent No. 5,242,503). Applicant respectfully traverses this rejection.

The Examiner argued that it would have been obvious to a person having ordinary skill in the art to use the resin taught by Horwitz et al. in the solid removal process taught by Grant. Office Action, page 5. However, as discussed above Horwitz et al. does not teach the same cleansing processing agent required by the claims. Additionally, Horwitz et al. clearly identifies its resin as “an ion exchange resin for extracting metal ions from a liquid waste stream.” Horwitz et al., Abstract (emphasis added). Accordingly, Horwitz et al. does not establish obviousness of a claim as the Examiner suggests because it does not disclose or suggest each element of the claim; it provides no reason that would have prompted one of ordinary skill in the art to combine the elements and/or modify the resin so as to reach the requirements of the claim; and it does not provide any have been a reasonable expectation of success of the combination and/or modification. MPEP § 2143; *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. \_\_\_, Slip Op No. 04-1350, 119 Fed. Appx. 282 (April 30, 2007).

**IV. Conclusion**

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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